

Interactive comment on “Response of key stress-related genes of the seagrass *Posidonia oceanica* in the vicinity of submarine volcanic vents” by C. Lauritano et al.

Anonymous Referee #1

Received and published: 29 April 2015

General comments The manuscript in review compares the gene expression differences in *Posidonia oceanica* sea grass from two Mediterranean volcanic vents for the first time according to the authors, allowing the addition of genetic information to expand upon the response to CO₂ concentration and pH differences normally relied upon to gauge the health of this species. While gene expression information is a novel addition to this science, as written, this manuscript weakly justifies the use of such information. Additionally, English grammatical errors and a lack of references are found throughout manuscript. Thus, I recommend resubmission pending modifications. Specific comments Page 4948, line 4: “should positively react” is a vague statement Page 4948, line 21 – 22: “environmental and evolutionary.sites”, vague statement Page 4951,

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line 25: define “low quantities” Page 4953, line 14: remove “little spot” and specifically define area Page 4953, line 20: add “relatively” in front of “acidified” Page 4957, line 4: define “adult intermediate leaves” Page 4958, line 22 – 27: lacking references Page 4959, line 2: “although in one. . .” please specify which site. Page 4959, lines 22 -25: Without any quantitative measurements of the mentioned factors, this argument is not supportable. In addition, as written, “heat shocks” is considered not probable, however this needs to be reconciled with the paragraph beginning on the same page, line 28.

Technical comments Figure 1 is unreadable.

Figure 2 is not helpful as constructed and should be omitted.

Table 1 and Figure 1 need to be better connected so that the reader can easily understand the site differences within each vent vicinity as well as cross vent comparisons.

Interactive comment on Biogeosciences Discuss., 12, 4947, 2015.

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